

In the Claims

Applicant has submitted a new complete claim set indicating marked up claims with insertions and deletions indicated by underlining and strikeouts, respectively.

Please amend pending claim 25 as noted below.

Please add new claims 85-90.

Claim 1 (Withdrawn): A method for preventing mammalian cell migration, comprising: inducing a functional Ena/VASP protein in a mammalian cell in an effective amount for preventing cell migration.

Claim 2 (Withdrawn): The method of claim 1, wherein the functional Ena/VASP protein is induced by contacting the mammalian cell with an Ena/VASP activator.

Claim 3 (Withdrawn): The method of claim 2, wherein the Ena/VASP activator is a plasma membrane targeting compound that targets the endogenous Ena/VASP protein to the plasma membrane.

Claim 4 (Withdrawn): The method of claim 3, wherein the plasma membrane targeting compound is an Ena/VASP binding molecule conjugated to a plasma membrane targeting domain.

Claim 5 (Withdrawn). The method of claim 4, wherein the Ena/VASP binding molecule is an EVH1 binding molecule.

Claim 6 (Withdrawn): The method of claim 5, wherein the EVH1 binding molecule is a FPPPP peptide.

Claim 7 (Withdrawn): The method of claim 5, wherein the EVH1 binding molecule is a peptide mimetic.

Claim 8 (Withdrawn): The method of claim 2, wherein the Ena/VASP activator is exogenous Ena/VASP protein.

Claim 9 (Withdrawn): The method of claim 1, wherein the functional Ena/VASP protein is induced by expression of exogenous Ena/VASP protein in the cell.

Claim 10 (Withdrawn): The method of claim 1, wherein the mammalian cell is a tumor cell.

Claim 11 (Withdrawn): The method of claim 10, wherein the tumor cell is *in vitro*.

Claim 12 (Withdrawn): The method of claim 10, wherein the tumor cell is *in vivo*.

Claim 13 (Withdrawn): The method of claim 1, wherein the Ena/VASP protein is Mena.

Claim 14 (Withdrawn): The method of claim 1, wherein the Ena/VASP protein is VASP.

Claim 15 (Withdrawn): The method of claim 1, wherein the Ena/VASP protein is Mena and VASP.

Claim 16 (Withdrawn): The method of claim 1, wherein the Ena/VASP protein is Mena and Evl.

Claim 17 (Withdrawn): A method for preventing tumor cell metastasis in a subject, comprising:

administering to a subject having or at risk of developing a metastatic cancer a plasma membrane targeting compound in an effective amount for preventing cell migration in order to prevent tumor cell metastasis.

Claims 18-24 (Canceled)

Claim 25 (Currently Amended): A method for identifying an a-therapeutic Ena/VASP activator or inhibitor, comprising:

contacting a mammalian cell with a putative Ena/VASP activator or inhibitor,
determining the effect of the putative Ena/VASP activator or inhibitor on cell migration,
and

identifying the putative Ena/VASP activator or inhibitor as an Ena/VASP activator when the mammalian cell has a decreased rate of migration or as an Ena/VASP inhibitor when the mammalian cell has an increased rate of migration with respect to an untreated control mammalian cell.

Claim 26 (Withdrawn): A method for identifying a therapeutic Ena/VASP activator or inhibitor, comprising:

contacting a mammalian cell with a putative Ena/VASP activator or inhibitor,
determining the intracellular location of endogenous Ena/VASP, and
identifying an Ena/VASP activator when the endogenous Ena/VASP is localized in the plasma membrane or an Ena/VASP inhibitor when the endogenous Ena/VASP is localized to a membrane of an intracellular organelle.

Claim 27 (Canceled)

Claim 28 (Withdrawn): A method for promoting cell migration, comprising:
depleting a mammalian cell of a functional Ena/VASP protein to promote cell migration.

Claims 29-36 (Canceled)

Claim 37 (Withdrawn): A method for promoting tissue generation comprising,
contacting mammalian cells of a tissue type with an Ena/VASP inhibitor to promote actin polymerization and tissue formation on a scaffold.

Claims 38-44 (Canceled)

Claim 45 (Withdrawn): A method for preventing neurodegeneration, comprising: administering to a subject at risk of neurodegeneration an Ena/VASP inhibitor in an amount effective to prevent neurodegeneration.

Claim 46-51 (Canceled)

Claims 52 (Withdrawn): A method for enhancing learning and memory, comprising: administering to a subject an Ena/VASP inhibitor in an amount effective to enhance learning and memory.

Claims 53-55 (Canceled)

Claim 56 (Withdrawn): A method for disrupting learning and memory, comprising: administering to a subject an Ena/VASP activator in an amount effective to disrupt learning and memory.

Claims 57-58 (Canceled)

Claim 59 (Withdrawn): A composition, comprising, an Ena/VASP inhibitor in an effective amount for promoting cellular migration and a pharmaceutically acceptable carrier.

Claims 60-64 (Canceled)

Claim 65 (Withdrawn): A composition, comprising, an effective amount for preventing cellular migration, of an Ena/VASP activator in a pharmaceutically acceptable carrier.

Claims 66-70 (Canceled)

Claim 71 (Withdrawn): 71. A modified cell, comprising:
an Ena/VASP negative cell.

Claims 72-74 (Canceled)

Claims 75 (Withdrawn): A method for identifying a therapeutic compound for inhibiting cellular migration, comprising:

contacting a cell of claim 71 with a putative compound for inhibiting cellular migration,
and

determining the effect of the putative compound on cellular migration, wherein a putative compound which inhibits cellular migration is a therapeutic compound.

Claim 76 (Withdrawn): A compound, comprising:
an actin binding domain and a cell motility domain, wherein the compound does not include a Listeria motility domain.

Claims 77-81 (Canceled)

Claims 82 (Withdrawn): A modified Ena/VASP protein, comprising: the amino acid sequence of the mature peptide of SEQ ID NO: 2 wherein at least one amino acid residue has been substituted and wherein the substitution is selected from the group consisting of (a) a non-conservative or conservative substitution of a serine residue corresponding to position 236 or 376 of SEQ ID NO: 2; (b) a non-conservative substitution or deletion of one or more residues corresponding to position 411-429 of SEQ ID NO:2; (c) a conservative substitution of at least one residue corresponding to position 281-344 of SEQ ID NO: 2; (d) a non-conservative substitution or deletion of at least one residue corresponding to position 281-344 of SEQ ID NO: 2; and (e) a non-conservative or conservative substitution or deletion of one or more residues corresponding to position 411-429 of SEQ ID NO:2.

Claim 83 (Withdrawn): A method for identifying a therapeutic compound for inhibiting or promoting cellular migration, comprising:

screening one or more putative compounds for the ability to interact with an actin barbed end to identify an actin binding molecule,

determining the effect of the actin binding molecule on cellular migration to determine whether the actin binding molecule is a therapeutic compound for inhibiting or promoting cellular migration.

Claim 84 (Canceled)

Claim 85 (New) The method of claim 25, wherein the putative Ena/VASP activator or inhibitor is identified as an Ena/VASP activator.

Claim 86 (New) The method of claim 25, wherein the putative Ena/VASP activator or inhibitor is identified as an Ena/VASP inhibitor.

Claim 87 (New) The method of claim 25, wherein the putative Ena/VASP activator or inhibitor is an oligonucleotide.

Claim 88 (New) The method of claim 25, wherein the putative Ena/VASP activator or inhibitor is a peptide.

Claim 89 (New) The method of claim 25, wherein the putative Ena/VASP activator or inhibitor is a peptide mimetic.

Claim 90 (New) The method of claim 25, wherein the putative Ena/VASP activator or inhibitor is selected from a library.